

**ABSTRACT**

5           A method of video motion estimation is described for determining the  
dominant motion in a video image. The dominant motion is defined by a  
parametric transform, for example a similarity transform. In the preferred  
embodiment, selected pairs of blocks in one frame are traced by a block  
10 matching algorithm into a subsequent frame, and their change in position  
determined. From that information, an individual parameter estimate is  
determined. The process is repeated for many pairs of blocks, to create a large  
number of parameter estimates. These estimates are then sorted into an ordered  
list, the list is preferably differentiated, and the best global value for the  
15 parameter is determined from the differentiated list. One approach is to take  
the minimum value of the differentiated list, selected from the longest run of  
values which fall below a threshold value. Alternatively, the ordered list may  
be examined for flat areas, without explicit differentiation. The technique is  
particularly suited to low complexity, low bit rate multimedia applications,  
20 where reasonable fidelity is required without the computational overhead of full  
motion compensation.

(Figure 2)